SECRET

Office Memorandum • UNITED STATES GOVERNMENT

TO : Acting Chief, Planning and Review Staff, ORR DATE: 22 August 1955
THRU : Chief, Materials Division, ORR
FROM : Chief, Chemicals Branch, D/M/RR

SUBJECT: Project No. 20.762 - Studies of Selected Polish Installations

1. Attached herewith, please find data available in our files on 5 Polish Chemical Plants.

2. Confirming conversation with [redacted] we are submitting one set complete with photographs as sent to you by IR. The other five sets consist only of our intelligence on the plants.

25X1A

[redacted]

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WHC:kjh
RR/D/M/RR
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KEDZIERZYN (HEYDEBRECK) CHEMICAL PLANT

LOCATION

This combine now encompasses the former two chemical plants - Blechhammer (Blachownia) North Chemical Plant and Blechhammer (Kedzierzyn) South Chemical Plant - and is located in the vicinity of the town of Kedzierzyn (Heydebreck), (50°21'N 18°12'E). The buildings of this large combine stretch along the north side of the highway between Gliwice and Kedzierzyn, and east of the railroad line between Raciborz and Kedzierzyn.

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(See diagrams in [redacted] Also map in CIA Library - Call No. 84263-R.)

NAMES

Current Polish name of combine is ZAKLADY PRZEMYSLU AZOTOWEGOW KEDZIERZYN.

Other Current Names:

1. ZPA KEDZIERZYN
2. KEDZIERZYN Chemical Combine
3. HEYDEBRECK Chemical (Nitrogen) Plant

Former German names of plants included in this combine are:

1. OBERSCHLESISCHE HYDRIERWERKE (Upper Silesia Hydrogenation Works. I.G. Farben industrie Controlled).
2. HERMANNGOERING WERKE, HYDRIERWERKE BLECHHAMER (Hermann Goering Combine, Blechhammer Hydrogenation Works).

PRODUCTS

Nitrogenous Products

Ammonia (Synthetic)
Nitric Acid
Ammonia Nitrate
Saltpeter (Sodium Nitrate)

Potassium Nitrate
Calcium Ammonium Nitrate (Saletrzak)
Guanidine
Melamine
Calcium Cyanamide

Other Inorganic Products

Calcium Phosphate
Mono and Diammonium Phosphate
Thermophosphate (Termofosfat)
Oxygen
Hydrazine
Hydrazine Hydrate
Hydrogen Peroxide

Organic Products

Detergents
Synthetic fatty acids
Synthetic waxes
Synthetic aliphatic alcohols
Synthetic wetting, emulsifying and cleaning agents
Solvents for paints and lacquers
Softeners for plastics
Fixing compounds ("W" and "VCM")
Insecticides
Chloromycetin
Phthalic Anhydride

PROCESSES

1. Synthetic ammonia by Haber-Bosch Process.

2. Nitric acid from ammonia with platinum catalyst.

3. Nitrogenous compounds from nitric acid plus ammonia, limestone phosphate rock, etc.

4. Urea from ammonia and carbon dioxide.

5. Fatty acids catalytic oxidation of paraffin "gacz" (low-melting paraffin).

6. Synthetic waxes by catalytic oxidation of hard paraffin.

7. Paraffins, synthetic fuels, solvents, etc. by Fischer-Tropsch Process.

8. Reported Bergius Process also used in hydrogenation processes.

9. Detergents by sulfonation of alcohols obtained from fatty acids.

HISTORY

The Germans constructed the several chemical plants in the vicinity of Kedzierzyn prior to World War II. These plants suffered heavy damage during World War II. What remained intact after the war was dismantled by the Russians and carried to the USSR during 1945-1946. Reconstruction was started in 1947 but no chemicals were produced until the end of 1953 when the first ammonia was produced.

Expansion and reconstruction is still taking place, and is making this the largest nitrogen chemical plant in Poland, as well as one of the largest in Europe.

PLANT LAYOUT

See the following enclosures:

1. Target Mosaic of Blechhammer North Synthetic Oil Plant dated August 1943 (prior to destruction).

2. Annotated plant layout drawing of Blechhammer North Synthetic Oil Plant dated December 1942 (prior to destruction).

3. Target Mosaic of Blechhammer South Synthetic Oil Plant dated April 1944 (prior to destruction).

4. Annotated plant layout drawing of Blechhammer South Synthetic Oil Plant dated December 1942 (prior to destruction).

5. Diagram of Blechhammer South Synthetic Oil Plant dated January 1955.

PHOTOGRAPHY

See Enclosures 3 and 4

RELATIVE IMPORTANCE

This chemical plant is reputed to be to the Polish Chemical Industry what the Lenin steel plant is to the Polish Steel Industry. It is expected that after 1955, Kedzierzyn will be producing one-half of the total nitrogen production of Poland. In light of the tremendous potential for producing nitrogenous compounds, it is reasonable to expect that it would be a relatively simple matter to convert this plant to nitro-explosives during wartime threats. Any sudden decrease in production of nitrogenous fertilizers (their major endeavor at the present time) would be indicative of a change in intentions.

The recent commencement of production of hydrogen peroxide, hydrazine and hydrazine hydrate at Kedzierzyn definitely increases Poland's ability to produce rocket fuels and explosives for wartime use.

OSWIECIM CHEMICAL PLANT

LOCATION

The plant is located in upper Silesia on the South bank of the Vistula River. The northern border of the plant is along the river. It is about 2 kms east of Oswiecim at Dwory. The plant site is about 5 km long and 1.3 km wide. (50°02'N 19°14'E) [redacted] 25X1A

25X1A [redacted]

NAME

1. The name of this plant under German Administration was I.G. Farbenindustrie, A.G., Auschwitz.

2. Variations of the plant's current name is as follows:

   a. Zaklady Chemiczne Oswiecim (Oswiecim Chemical Plant)

   b. Dwory Chemical Plant

   c. Dwory Synthetic Gas and Rubber Plant

   d. The 1954 telephone directory for the area lists the plant as Zaklady Chemiczne W Budowie, Dwory (Chemical Establishment in Construction, Dwory)

PRODUCTS

Inorganic Products

Calcium carbide
Oxygen
Chlorine
Caustic soda

Organic Products

Synthetic gasoline (Syntine)
Synthetic rubber (Possibly Buna S type)
Acetylene
Methanol
Acetic acid
Acetic anhydride
Acetone
Formaldehyde
Acetaldehyde
Benzol (Possibly produced)
Monochlorobenzene
Synthetic Phenol
Polyvinyl chloride
Rayon
Ethylene
Ethylene oxide
Trichloroethylene

PROCESSES

1. Chlorine and Caustic soda are produced by electrolysis of brine.

2. Synthetic fuel is produced by the Fischer Tropsch process from brown coal.

3. Acetylene is produced by the reaction of calcium carbide and water.

4. Acetaldehyde is produced by the addition of hydrogen to acetylene.

5. Acetic Acid is produced by oxidation of acetaldehyde.

6. Acetic anhydride is produced by dehydrating the acetic acid.

7. Benzene possibly is recovered by condensation from coking gas.

8. Monochlorobenzene is produced by chlorinating benzene.

9. Phenol is produced from the monochlorobenzene.

EQUIPMENT

1. Mercury Electrolytic Cells

2. Fischer Furnaces

3. Other specific equipment is not known

HISTORY

The Germans commenced construction of this plant in 1943 and the plant was in partial operation, producing synthetic fuels, in 1945. The Russian dismantled portions of the plant in 1945 and reconstruction was not started until 1947. The plant is now the largest organic combine in Poland and expansion is continuing.

PLANT LAYOUT

See Enclosure # 1

PHOTOGRAPHY

See Enclosure # 2

RELATIVE IMPORTANCE

Oswiecim is the largest organic chemical combine in Poland. Eighteen thousand workers were reported working in this combine in 1954.

While there is a potential for synthesizing an almost endless number of organic compounds, synthetic gasoline, benzol, chlorine, acetylene and phenol appear to be of strategic importance in advancing Poland to a high degree of self-sufficiency in organic chemicals. It has been reported that the synthetic gasoline portion of the combine is considered the most vital unit in the combine.

Recent expansion in facilities for producing calcium carbide and acetic acid will enhance the strategic importance of this combine by making it possible to produce formerly imported chemicals. This plant is now the largest carbide producer in Poland.

CHEMICAL PLANT AT BRZEG DOLNY (DYHERNFURTH)

LOCATION

25X1A

The chemical plant at Brzeg Dolny (Dyhernfurth) (51°16'N 16°43'E) lies Northeast of the city, 500 to 800 meters from the main railroad station and about 2 kilometers north of the Oder River.

The official address as listed in Rocznik Przemyslu Adrodzone Polski (Yearbook of the Industry of Regenerated Poland, 1948) is Brzeg Dolny, Telephone 8, Wolow Powiot, Wroclaw Wojewodztwo (Lower Silesia).

NAME

The wartime name of this plant was Anorgana GMBH, Dyhernfurth. After World War II it was renamed ROKITA. Following are variations of the new name as reported in various documents:

1. Nadodrzanskie Zaklady Przemyslu Organicznego ROKITA (Oder establishments of the Organic Industry ROKITA.)
2. Sztandarowa Fabryka Chemiczna Polfabrykatow Organicznych ROKITA (ROKITA Standard Chemical Plant for Organic Semi-Manufactures.)
3. ROKITA Synthetic Chemical Works.
4. Panstowa Standartowa Fabryka Produktow Organicznych ROKITA (State Factory for Organic Products ROKITA) another translation (ROKITA State Banner Factory of Organic Products).

PRODUCTS

Benzene Hexachloride (Gammexan BHC, Hexachlorocyclohexane) (Insecticide)
Glycol
Polyglycol
Chlorine (Production started in 1954)
Formalin
Weed Killer (2-4D)
Ethylene Oxide
Dyestuff
Tanning Agents
"Gamatox" (pesticide)
Synthetic Detergents
Hexachloroethane

PROCESSES

1. Benzene Hexachloride is produced by photo-chlorinating Process (Photochlorierung-Process)

2. Glycol and Polyglycol are produced by the following steps. Alcohol - Ethylene - Ethyline Chlorohydrin - Glycol and Polyglycol

3. The Chlorine is produced by mercury electrolytic cells (Quecksilberzellen).

HISTORY

Early in 1940, the plant was built by the I.G. Farben-Industrie for the production of nerve gases. It was intended to produce 1,000 tons of Tabun per month but it is believed about 700 to 800 tons per month was the maximum achieved.

At the end of 1943, Sarin (GB) came into the picture and it was decided to build a small plant (100 tons/month) at Dyhernfurth. At the time of the Russian capture, late in January 1945, it was indicated it would have required another three months to finish the plant. Blueprints, drawings, samples of intermediates and finished Tabun and Sarin and a complete set of coded manufacturing descriptions were probably obtained.

Reports differ as to the extent of damage suffered. One report states that the Soviets received the plant intact and dismantled it without damage. Another report indicates complete destruction.

After the War the Soviet officials expressed a wish to see the factory activated, expanded and transformed into a mixed chemical-industry trust. In 1946-1947 the Soviet military authorities helped in supplying machinery fittings and repairs to all destruction.

Reports vary as to the year the plant went into production. One report states that the plant went into production in 1949, however, other reports indicate that some departments were put into operation late in 1951 and in 1952. Early 1954 reports indicate that new sections are still being constructed.

PLANT LAYOUT OR FLOORPLAN

The only plant layout diagrams available in IR are memory sketches of the plant as it existed during the war when it produced war gases. The 1954 photographs attached, however, are considered more useful.

PHOTOGRAPHS

See Attachement II

RELATIVE IMPORTANCE

Rokita is one of Poland's major chemical combines. At one time it was reported that the development of Rokita was given priority within the frame-work of the State Plan over the Oswiecim Chemical Combine. Reports indicate that from 2-5,000 workers are employed.

Its strategic importance is based upon it potential for producing synthetic organic chemicals, most of which are being used for consumer products but which could be channelled easily into wartime needs if the situation demanded it.

Apparently Rokita is closely associated with the organic chemical combine at Oswiecim, from which it receives important basic materials.

AZOT CHEMICAL FACTORY IN JAWORZNO, POLAND

LOCATION

This plant is located approximately 3 kilometers SW of Jaworzno (50°13'N 19°17'E).

NAME

1. Panstwowo Fabryka Chemiczna "Azot" ("Azot" State Chemical Plant).

PRODUCTS

Chlorine
Caustic Soda
Metallic Sodium
Hydrochloric Acid
Trichloroethylene
Insecticides
Fungicides
Calcium carbide

PROCESSES

1. Chlorine and caustic soda are produced by the electrolysis of salt. Recent reports indicate a change to mercury salts.

2. Calcium Carbide is produced from limestone and coal in an electric furnace.

3. Calcium Carbide → Acetylene & Chlorine → Tetrachloraethane → Trichloroethylene.

4. Hydrochloric acid is apparently produced by burning Chlorine and Hydrogen obtained from the Chlorine electrolysis.

5. The insecticides produced are largely chlorinated compounds.

LIST OF MACHINERY AND/OR EQUIPMENT

1. Electrolytic cells

2. Calcium carbide furnace

BRIEF HISTORY

This plant was built in 1928. Additional buildings have been added since 1945 and expansion was reported underway in 1954. No war damage suffered.

FLOOR PLAN

See Attached.

PHOTOGRAPHY

None Available.

RELATIVE IMPORTANCE

Jaworzno is one of the smaller State Chemical Plants, employing about 1,000 workers. Its strategic importance is based primarily upon its production of chlorine and calcium carbide, which at present, are being used as the basis for domestic insecticides and fungicides. If necessary, the chlorine and carbide units could easily be used for supplying wartime needs.

CHORZOW NITROGEN PLANT

LOCATION

The plant is located in the Northeast area of Chorzow, due east of the Chorzow Railroad Station and has the Chorzow Railroad Yards on the Southeast corner. The plant is referred to as being located in 25X1A

25X1A Chorzow III. [redacted]

Adjacent to the Chemical Plant there is a large power plant. This plant not only services the Chemical Plant but is a part of the Polish Power Grid Network. (See enclosure # 1 for relative location and layout).

NAME

The current Polish name of the plant is:

ZAKLADY AZOTOWE im. PAWLA FINDERA (Nitrogen Plant im. Pawel Finder)

Other names of the plant are:

1. PANSTWOWE ZAKLADY ZWIAZKOW AZOTOWYCH CHORZOWIE (Municipal Calcium Cyanamide Processing Plant in Chorzow)
2. PANSTWOWA FABRYKA AZOTOWA (State Nitrogen Plant)
3. STATE NITROGEN COMPOUNDS PLANT AT CHORZOW

Former German name was KOENIGSHUETTE

PRODUCTS

Synthetic Ammonia
Nitric Acid
Nitrogenous Fertilizer and other Nitrogenous Compounds
Calcium Cyanamide
Calcium Ammonium Nitrate (Saletrzak)
Ammonium Nitrate
Ammonium Chloride
Ammonium Carbonate
Sodium Nitrate
Potassium Nitrate
Calcium Carbide
Supertomasyna (Similiar to Rhenama-phosphate)

Comment: This may be the only plant in Poland presently producing cyanamide

ENGLISH	POLISH	GERMAN
Calcium Cyanamide	Azotniak	Kalkstiakstoff
Calcium Ammonium Nitrate	Saletrzak	Kalkammonsalpeter
Sodium Nitrate	Saletra Sodowa	Natronsalpeter
Calcium Nitrate	Saletra Wapniowa	Kaliumsalpeter
Ammonium Nitrate	Saletra Amonowa	Ammonsalpeter

PROCESSES

The ammonia is synthesized by the NEC process, and the hydrogen is derived from coke water gas.

Equipment

1. Two new large furnaces operating with SOEDEBERG traveling graphite electrodes were under construction in 1947.

2. Calcium cyanamide was manufactured entirely by the most modern revolving drum furnaces. (1947)

3. Carbide was being manufactured by the old-fashioned furnaces with hard electrodes. (1947)

4. The plant uses German LINDE compressors to obtain nitrogen from the air.

HISTORY

The plant was built by the Germans in 1914 to fill their vital needs during World War I. Since it was located just inside the Polish Border, the Poles thought that it could not be defended in case of a German attack, therefore, they (the Poles) built another plant at Tarnow. The Chorzow Plant was not damaged during World War II.

PLANT LAYOUT

See Enclosure # 1

PHOTOGRAPHY

No recent photography available.

RELATIVE IMPORTANCE

Chorzow is currently producing approximately one-quarter of Poland's total production of nitrogen fertilizers. Before World War II it produced about one-half of Polands nitrogen fertilizers. This does not mean that Chorzow's production has decreased, but rather that new plants have increased Poland's total production of nitrogen fertilizers. Quantitatively, Chorzow's post-war production of nitrogen fertilizer is about double its pre-World War II production.

Chorzow's outstanding production of calcium carbide and calcium cyanamide gives Chorzow a special strategic importance since these products are of prime importance as raw materials in synthesizing other chemicals in nearby chemical plants.

It is expected that a major effort will continue in the production of supertomasyha, since this is a fertilizer comparable to superphosphate, but one in which large quantities of sulfuric acid are not required for its manufacture.